

# POSTGRADUATE DIPLOMA IN FINANCIAL AND COMPUTATIONAL MATHEMATICS

## Overview

NFQ Level 9, Major Award

## Exit Award only

Candidates on the MSc (Financial and Computational Mathematics) (<https://ucc-ie-public.courseleaf.com/programmes/mscfcml/>) programme who pass Part I but who fail to meet the requirements to proceed to Part II (see Marks and Standards (<https://ucc-ie-public.courseleaf.com/general/marksandstandards/>)) or who choose not to progress to Part II will exit the programme with the Postgraduate Diploma in Financial and Computational Mathematics.

## Programme Requirements

For information about modules, module choice, options and credit weightings, please go to Programme Requirements (p. 1).

## Programme Requirements

Code	Title	Credits
Students take <b>60</b> credits as follows – all listed core modules ( <b>45</b> credits) and <b>15</b> credits of elective modules:		
<i>Core Modules</i>		
MF6010	Probability Theory in Finance	10
MF6011	Derivatives, Securities, and Option Pricing	5
MF6012	Computational Finance I	5
MF6013	Computational Finance II	5
MF6014	Topics in Financial Mathematics	5
MF6015	Continuous Time Financial Models	5
AM6004	Numerical Methods and Applications	5
CS6322	Optimisation	5
<i>Elective Modules</i> <sup>1</sup>		
Students take modules to the value of <b>15</b> credits from the following:		<b>15</b>
AM6007	Scientific Computing with Numerical Examples	
AM6019	Partial Differential Equations	
ST4400	Data Analysis II	
ST6040	Machine Learning and Statistical Analytics I	
ST6041	Machine Learning and Statistical Analytics II	
CS6503	Introduction to Relational Databases	
<b>Total Credits</b>		<b>60</b>

<sup>1</sup> Module selection must be approved by the module co-ordinator.

## Examinations

Full details and regulations governing Examinations for each programme will be contained in the *Marks and Standards Book* and for each module in the *Book of Modules*.

## Programme Learning Outcomes

**Programme Learning Outcomes for Postgraduate Diploma in Financial and Computational Mathematics (NFQ Level 9, Major Award)**

On successful completion of this programme, students should be able to:

- Demonstrate technical competence in the computational aspects of financial mathematics;
- Explain the theoretical basis of mathematical models and techniques used in financial applications;
- Outline how this mathematical framework is influenced by the structure of financial markets
- Identify the limitations of mathematical and statistical models applied to real-world scenarios;
- Apply appropriate programming languages and software packages to the analysis of problems and mathematical models arising in financial applications.